

CLAIMS

1. A frame assembly for a sootblower for projecting a stream of a fluid blowing medium against internal surfaces of a combustion device, the sootblower of the type having a lance tube and a carriage which carries the lance tube causing it to be periodically advanced into and retracted from the interior of the combustion device, the carriage of the type having one or more support rollers and a drive pinion gear, the support rollers and the drive pinion gear being rotatable about generally horizontal axes and the drive pinion gear meshing with a toothed rack affixed to the frame, the frame assembly comprising:

a pair of elongated side panels for enclosing the carriage, the side panels formed of substantially uniform thickness metal stock formed to integrally define a first generally horizontal panel track surface, a second generally horizontal panel track surface and a vertical panel track surface extending between the first and the second track surfaces, the first track surface the second track surface and the vertical panel track surface cooperating to define a roller channel extending substantially the entire length of the frame assembly for supporting the support rollers to roll along the side panels.

2. The frame assembly in accordance with Claim 1 further comprising the side panels further defining a roller channel opening inwardly formed in part by the first track surface which extends inwardly.

3. The frame assembly in accordance with Claim 1 further comprising the second track surface extending inwardly a greater distance than the first track surface.

4. The frame assembly in accordance with Claim 3 wherein the toothed rack is fastened to the second track surface inboard of the support roller with teeth of the toothed rack facing downwardly.

5. The frame assembly in accordance with Claim 1 further comprising the side panels forming a pocket.

6. The frame assembly in accordance with Claim 5 further comprising a bar fastened within the pocket for enabling multiple track surfaces of the side panels to be connected together.

7. The frame assembly in accordance with Claim 6 further comprising the pocket opening outwardly.

8. The frame assembly in accordance with Claim 1 further comprising the first track surface formed by a reversely bent flange.

9. The frame assembly in accordance with Claim 1 further comprising the second track surface formed by a reversely bent flange.

10. The frame assembly in accordance with Claim 1 further comprising the pair of the side panels including a right-hand side panel and a left-hand side panel and a top panel extending between the right-hand side panel and the left-hand side panel.

11. The frame assembly in accordance with Claim 10 further comprising the top panel being integrally formed with the right-hand side panel and the left-hand side panel.

12. The frame assembly in accordance with Claim 1 further comprising one or more tie bars connecting a pair of the side panels together to define a right-hand side panel and a left-hand side panel.

13. The frame assembly in accordance with Claim 1 further comprising the frame assembly forming a forward end for positioning adjacent to the combustion device and a rearward end for positioning spaced from the combustion device, the sootblower having a rear module attachable to the side panels and having rail track surfaces for supporting the support rollers and the rear module having means for enabling removal of the carriage from the sootblower.

14. The frame assembly in accordance with Claim 1 further comprising the side panels each forming a first and a second roller channel, the first and the second roller channels having vertical spacings which are different whereby the side panels can accept rollers of different diameters.

15. The frame assembly in accordance with Claim 1 further comprising the side panels forming profile track surfaces having "T" shaped channels for receiving fasteners.

16. The frame assembly in accordance with Claim 1 further comprising one or more of the side panels formed by a plurality of separately formed panel track surfaces affixed together to form the side panel.

17. The frame assembly in accordance with Claim 16 further comprising the panel track surfaces cooperating with the side panels to define enclosed track surfaces forming cavities.

18. The frame assembly in accordance with Claim 1 further comprising the first and the second track surfaces having a crowned surface for engaging the carriage roller and the roller having a complementary shaped crowned profile surface.

19. The frame assembly in accordance with Claim 1 further comprising the carriage rollers engaging the first track surface to restrain loads primarily acting in the vertical direction.

20. The frame assembly in accordance with Claim 1 further comprising the side panels having a corrosion resistant coating substantially covering its entire exterior surface.

21. The frame assembly in accordance with Claim 20 further comprising the corrosion resistant coating is a galvanizing coating.

22. The frame assembly in accordance with Claim 1 further comprising at least one of the first or the second track surface having a flange for trapping the roller.

23. The frame assembly in accordance with Claim 1 further comprising the first track surface formed by a projecting flange having a round cross-sectional shape.

24. The frame assembly in accordance with Claim 1 further comprising the first track surface having a plurality of perforations for engagement with the roller.

25. The frame assembly in accordance with Claim 1 further comprising the first track surface having a track bar disposed thereon for engagement with the carriage roller.

26. A frame assembly for a sootblower for projecting a stream of a fluid blowing medium against internal surfaces of a combustion device, the sootblower of the type having a lance tube and a carriage which carries the lance tube causing it to be periodically advanced into and retracted from the interior of the combustion device, the carriage of the type having one or more support rollers and a drive pinion gear rotatable about a generally horizontal axis and the drive pinion gear meshing with a toothed rack affixed to the frame, the frame assembly comprising:

a pair of elongated side panels for enclosing the carriage, a rail affixed to the side panels, the rails formed of substantially uniform thickness metal stock formed to integrally define a first generally horizontal track surface, a second generally horizontal track surface and a vertical panel surface extending between the first and the second track surfaces, the first track surface the second track surface and the vertical panel surface cooperating to define a roller channel extending substantially the entire length of the rail and the side panels for supporting the support rollers.

27. The frame assembly in accordance with Claim 26 further comprising the rails further defining the roller channel opening inwardly formed in part by the first track surface which extends inwardly.

28. The frame assembly in accordance with Claim 26 further comprising the second track surface extending inwardly a greater distance than the first track surface.

29. The frame assembly in accordance with Claim 28 wherein the toothed rack is fastened to the second track surface inboard of the support roller with teeth of the toothed rack facing downwardly.

30. The frame assembly in accordance with Claim 26 further comprising the frame assembly forming a forward end for positioning adjacent to the combustion device and a rearward end for positioning spaced from the combustion device, the sootblower having a rear module attachable to the side panels and having rail track surfaces for supporting the support rollers and the rear module having means for enabling removal of the carriage from the sootblower.

31. The frame assembly in accordance with Claim 26 further comprising the first and the second track surfaces having a crowned surface for engaging the rollers and the roller having a complementary crowned profile surface.

32. The frame assembly in accordance with Claim 26 further comprising the carriage rollers engaging the first track surface to restrain loads primarily acting in the vertical direction.

33. The frame assembly in accordance with Claim 26 further comprising the first track surface formed by a projecting flange having a round cross-sectional shape.

34. The frame assembly in accordance with Claim 26 further comprising the first track surface having a plurality of perforations for engagement with the roller.

35. The frame assembly in accordance with Claim 26 further comprising the first track surface having a track bar disposed thereon for engagement with the carriage roller.

36. A frame assembly for a sootblower for projecting a stream of a fluid blowing medium against internal surfaces of a combustion device, the sootblower of the type having a lance tube and a carriage which carries the lance tube causing it to be periodically advanced into and retracted from the interior of the combustion device, the carriage of the type having one or more support rollers and a drive pinion gear rotatable about a generally horizontal axis and the drive pinion gear meshing with a toothed rack affixed to the frame, the frame assembly comprising:

a pair of elongated side panels for enclosing the carriage, a rail affixed to the side panels, the rails formed of substantially uniform thickness metal stock formed to integrally define a first generally horizontal panel track surface, a second generally horizontal panel track surface and a vertical panel surface extending between the first and the second track surfaces, the first track surface the second track surface and the vertical panel cooperating to define a roller channel extending substantially the entire length of the rail and the side panels for supporting the support rollers.

37. A frame assembly for a sootblower for projecting a stream of a fluid blowing medium against internal surfaces of a combustion device, the sootblower of the type having a lance tube and a carriage which carries the lance tube causing it to be periodically advanced into and retracted from the interior of the combustion device, the carriage of the type having one or more support rollers and a drive pinion gear rotatable about a generally horizontal axis and the drive pinion gear meshing with a toothed rack affixed to the frame, the frame assembly comprising:

a pair of elongated side panels for enclosing the carriage, a rail affixed to the side panels, the rails formed of substantially uniform thickness metal stock formed to integrally define a first generally horizontal panel track surface, a second generally horizontal panel track surface and a vertical panel extending between the first and the second track surfaces, the first track surface the second track surface and the vertical panel cooperating to define a roller channel extending substantially the entire length of the rail and the side panels for supporting the support rollers, and

the frame assembly forming a forward end for positioning adjacent to the combustion device and a rearward end for positioning spaced from the combustion device, the frame assembly having a rear module attachable to the side panels and having rail track surfaces for supporting the support rollers and the rear module having means for enabling removal of the carriage from the frame assembly.

38. A frame for a sootblower for projecting a stream of a fluid blowing medium against internal surfaces of a combustion device, the sootblower of the type having a lance tube and a carriage which carries the lance tube causing it to be periodically advanced into and retracted from the interior of the combustion device, the carriage of the type having one or more support rollers and a drive pinion gear meshing with a toothed rack affixed to the frame, the frame comprising:

a pair of elongated side panels for enclosing the carriage including a right-hand side panel and a left-hand side panel, the side panels made of substantially uniform thickness metal stock each formed to integrally define an inwardly facing channel each having a lower surface defined by a first horizontal panel track surface for allowing the support rollers to roll along the side panels and each having an upper surface defined by a second horizontal panel track surface for mounting the toothed rack to the side panels with the first and second track surfaces joined by a first track surface.

39. The frame assembly in accordance with Claim 38 further comprising the side panels further defining a roller channel opening inwardly formed in part by the first track surface which extends inwardly.

40. The frame assembly in accordance with Claim 38 further comprising the second track surface extending inwardly a greater distance than the first track surface.

41. The frame assembly in accordance with Claim 38 wherein the toothed rack is fastened to the second track surface inboard of the support roller with teeth of the toothed rack facing downwardly.

42. The frame assembly in accordance with Claim 38 further comprising the side panels forming a pocket.

43. The frame assembly in accordance with Claim 42 further comprising a bar fastened within the pocket for enabling multiple track surfaces of the side panels to be connected together.

44. The frame assembly in accordance with Claim 42 further comprising the pocket opening outwardly.

45. The frame assembly in accordance with Claim 38 further comprising the first track surface formed by a reversely bent flange.

46. The frame assembly in accordance with Claim 38 further comprising the second track surface formed by a reversely bent flange.

47. The frame assembly in accordance with Claim 38 further comprising the pair of the side panels including a right-hand side panel and a left-hand side panel and a top panel extending between the right-hand side panel and the left-hand side panel.

48. The frame assembly in accordance with Claim 47 further comprising the top panel being integrally formed with the right-hand side panel and the left-hand side panel.

49. The frame assembly in accordance with Claim 38 further comprising one or more tie bars connecting a pair of the side panels together to define a right-hand side panel and a left-hand side panel.

50. The frame assembly in accordance with Claim 38 further comprising the frame assembly forming a forward end for positioning adjacent to the combustion device and a rearward end for positioning spaced from the combustion device, the sootblower having a rear module attachable to the side panels and having rail track surfaces for supporting the support rollers and the rear module having means for enabling removal of the carriage from the sootblower.

51. The frame assembly in accordance with Claim 38 further comprising the side panels each forming a first and a second roller channel, the first and the second roller channels having vertical spacings which are different whereby the side panels can accept rollers of different diameters.

52. The frame assembly in accordance with Claim 38 further comprising the side panels forming profile track surfaces having "T" shaped channels for receiving fasteners.

53. The frame assembly in accordance with Claim 38 further comprising one or more of the side panels formed by a plurality of separately formed panel track surfaces affixed together to form the side panel.

54. The frame assembly in accordance with Claim 38 further comprising the panel track surfaces cooperating with the side panels to define enclosed track surfaces forming cavities.

55. The frame assembly in accordance with Claim 38 further comprising the first and the second track surfaces having a crowned surface for engaging the rollers and the roller having a complementary crowned profile surface.

56. The frame assembly in accordance with Claim 38 further comprising the carriage rollers engaging the first track surface to restrain loads primarily acting in the vertical direction.

57. The frame assembly in accordance with Claim 38 further comprising the side panels having a corrosion resistant coating substantially covering its entire exterior surface.

58. The frame assembly in accordance with Claim 57 further comprising the corrosion resistant coating is a galvanizing coating.

59. The frame assembly in accordance with Claim 38 further comprising at least one of the first or the second horizontal roller surface having a flange for trapping the roller.

60. The frame assembly in accordance with Claim 38 further comprising the first track surface formed by a projecting flange having a round cross-sectional shape.

61. The frame assembly in accordance with Claim 38 further comprising the first track surface having a plurality of perforations for engagement with the roller.

62. The frame assembly in accordance with Claim 38 further comprising the first track surface having a track bar disposed thereon for engagement with the carriage roller.